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ABSTRACT

This learning module, which is part of a staff development program for health occupations clinical instructors, covers the techniques entailed in developing and writing measurable performance objectives. It includes learning activities dealing with the components, characteristics, and domains of measurable performance objectives; levels of cognitive objectives; and techniques for revising and writing measurable performance objectives. Besides the learning activities, the module also includes directions for completing the module, an introduction, module objectives, pre- and posttests and answer keys, definitions of key terms used in the module, a module summary, and references. (MN)

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Health Occupations Clinical Teacher Education Series for Secondary and Post-Secondary Educators

Illinois State Board of Education

Adult, Vocational and Technical Education

Teaching Skills in the Clinical Setting: Developing Measurable Performance Objectives

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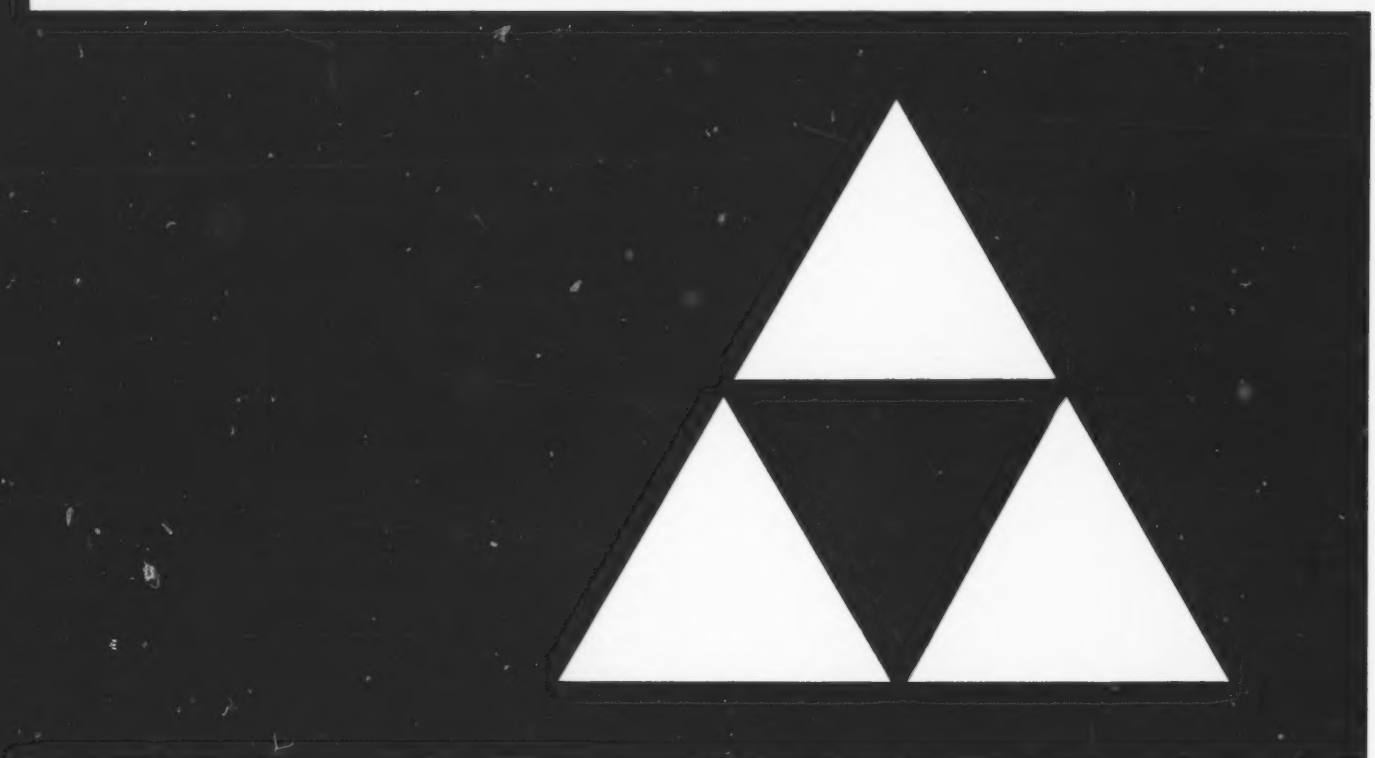

HEALTH OCCUPATIONS CLINICAL TEACHER EDUCATION SERIES FOR SECONDARY AND POST-SECONDARY EDUCATORS

Teaching Skills
in the Clinical Setting:
Developing Measurable
Performance Objectives

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Development Section

TEACHING SKILLS IN THE CLINICAL SETTING;

DEVELOPING MEASURABLE PERFORMANCE OBJECTIVES

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TEACHING SKILLS IN THE CLINICAL SETTING:

DEVELOPING MEASURABLE PERFORMANCE OBJECTIVES

DIRECTIONS FOR COMPLETING THE MODULE

The module includes the following parts:

1) Introduction and Objectives

2) Pre-Test and Answer Key

3) Learning Activities 1-6, and Self-Check Exercises

4) Post-Test and Answer Key

Following review of the Introduction, take the Pre-Test and use the key to determine your score. The Pre-Test is intended to help you identify the learning activities on which you should place primary focus.

Then proceed to complete the Learning Activities. Even if you have had extensive experience with writing objectives, completion of the Learning Activities will provide a good review and help you to "brush up" on your skills. It is important that you complete the Self-Check following each activity.

The final part of the module, the Post-Test, is intended to measure your achievement of the objectives of the module. Complete the test without using the key or the module itself. You may then score your test. If you had more than 3 incorrect answers, you should review the module.

Regardless of your score, remember that developing and utilizing performance objectives requires continued practice. The best place to practice is your own program, for your own classroom and/or clinical courses. Your program director or supervisor should be able to help you if needed.

Go on to the Introduction.

TEACHING SKILLS IN THE CLINICAL SETTING:

DEVELOPING MEASURABLE PERFORMANCE OBJECTIVES

INTRODUCTION

As health occupations instructors, we are concerned with assisting our students to gain the knowledge, skills, and attitudes necessary to work as competent health-professionals. The first step needed to accomplish this is to provide our students with MEASURABLE PERFORMANCE OBJECTIVES for clinical as well as classroom courses.

Measurable performance objectives are the "goals" which are to be achieved by the learner during the course of a unit of instruction. They are statements which set the direction for instruction. According to Mager (1975), measurable performance objectives "are useful in pointing to the content and procedures that will lead to successful instruction, in helping to manage the instructional process itself, and in helping to prepare the means of finding out whether the instruction has been successful." Without measurable performance objectives, learning cannot be successfully planned or evaluated.

The purpose of this module is to provide you with the knowledge and skills necessary to write measurable performance objectives of acceptable quality. Following achievement of the objectives stated in the module, you will be able to develop as well as implement measurable performance objectives for the courses you teach, and hence provide direction for your students.

Proceed to the Objectives.

OBJECTIVES OF THE MODULE

Terminal Objective: Following completion of this module, develop clinical performance objectives for your health occupations program.

Enabling Objectives:

1. Given a list of measurable performance objectives, identify the three major components of each objective.

2. Identify the characteristics of measurable performance objectives.

3. Given a list of measurable performance objectives, categorize each as being cognitive, psychomotor, or affective.

4. Given a list of cognitive objectives, identify the appropriate level of each objective.

5. Given a list of performance objectives, revise them so that they possess the necessary characteristics and components of measurable performance objectives.

6. Write a list of measurable performance objectives for a unit of clinical instruction in your health occupations area, according to specifications stated in this module.

Go on to the Pre-Test.

PRE-TEST

Complete this test prior to beginning the Learning Activities. Utilize the key to score your own test.

Directions: Answer True or False to the following:

T or F 1) Measurable performance objectives describe the desired behavior of the students.

T or F 2) Measurable performance objectives state the "ends" and the "means" of the performance of students.

T or F 3) The measurable performance objective indicates a general goal for the student to fulfill.

T or F 4) The measurable performance objective should state the desired performance, the conditions, and the criterion under which the student will perform the objective.

T or F 5) The measurable performance objective contains one specific action verb.

T or F 6) Measurable performance objectives are used to evaluate (test) student performance.

T or F 7) A unit of measurable performance objectives should be written on only one performance level.

T or F 8) The following performance objective is acceptable: "Administer CPR to a patient."

T or F 9) The following measurable performance objective is classified in the cognitive domain: "Given a patient and a mercury thermometer, the student will take the patient's temperature within $.5^{o}$ F accuracy in at least 2 minutes."

T or F 10) Of the following measurable performance objectives, objective A is at a higher performance level than objective B.

A) "Given a patient, the student will prepare a patient care plan according to the patient's needs."

B) "Given a written objective test, the student will list 3 components of a patient care plan."

Using the key on the next page, determine your score on the Pre-Test. The score should indicate how much you know or do not know about performance objectives. Even if you scored 100%, completion of the Learning Activities will help you to improve your ability to write objectives for your program. It is advised that you complete the entire module.

PRE-TEST ANSWER KEY

1) True. The purpose of the measurable performance objective is to measure the behavior (performance) of the student.

2) False. Measurable performance objectives state the "ends" desired performance rather than the "means" of the performance of students.

3) False. The measurable performance objective indicates a specific rather than a general goal for the student to fulfill.

4) True. In order to better communicate to the students their expected performance, the measurable performance objectives should contain the following components:

   a) performance
   b) conditions
   c) criterion

5) True. Since the measurable performance objective indicates a specific goal, the objective should contain only one specific action verb.

6) True. The fact that the performance objective is "measurable" enables you to use it to develop evaluation instruments (tests).

7) False. In order to provide a complete learning experience, you must write a unit of measurable performance objectives at a wide variety of performance levels.

8) False. This performance objective is neither acceptable nor measurable. It only states the desired performance and not the conditions or criteria under which the performance is to be measured.

9) False. This objective is classified in the psychomotor domain, because it refers to the performance of a skill rather than acquisition of knowledge.

10) True. Objective A requires a higher level of thinking than does Objective B; therefore, it is said to be of a higher performance level.

Go on to read the Definition of Terms, then proceed to Learning Activity #1.

DEFINITION OF TERMS USED IN THIS MODULE

Advisory Committee - A group of persons inside or outside of the educational profession, chosen from the school staff, community, state or nation to give advice regarding a school program. (Good, 1959)

Affective Objectives - A domain of objectives, ranging from mere attention to internalization of a value or value system. Attitudes and emotions are involved. (Hoover, 1982)

Behavior - Broadly, anything that an organism does, including overt, physical action, internal, physiological, and emotional processes, and implicit mental activity. (Good, 1959)

Cognitive Objectives - A domain of objectives, ranging from simple to complex, that involves basic reasoning (problem-solving) processes. (Hoover, 1982)

Competence - Ability to apply to practical situations the essential principles and techniques of a particular subject-matter field.

Condition - A statement which describes the performance or testing situation, not the teaching/learning situation. Lists tools, equipment, and limits of the testing situation. (Oen, 1983)

Criterion - A statement which describes how much is required, how quickly it must be completed, and the quality of work or performance. Reflects the standards of performance. (Oen, 1983)

Domain - A group of job tasks that are related on the basis of required skills, and knowledge. (V-TECS, 1980)

Hard Action Verb - A word that suggests distinct physical action, so that the action can be observed and measured.

Performance Objectives - Statements, in precise measurable terms, of particular behavior to be exhibited by a learner under specified conditions, including a standard of performance. (V-TECS, 1980)

Psychomotor Objectives. A domain of objectives that incorporates the necessary steps in the acquisition of mental and motor skills. (Hoover, 1982)

DEFINITION OF TERMS USED IN THIS MODULE (continued)

Task - A unit of work activity which constitutes logical and necessary steps in the performance of a duty. A task has a definite beginning and ending point in its accomplishments and generally consists of two or more definite steps. (V-TECS, 1980)

Task Analysis - A process of reviewing actual job content and context in business and industry (including the health care industry) for application to the development of performance objectives, performance guides, and quality control within a program of vocational/technical education. (V-TECS, 1980)

Taxonomy. - A classification or ordering of the types of responses specified as desired outcomes of education. (Krathwohl, 1964)

LEARNING ACTIVITY #1

THE COMPONENTS OF MEASURABLE PERFORMANCE OBJECTIVES

Enabling Objective 1: Given a list of measurable performance objectives, identify the three major components of each objective.

Measurable performance objectives are statements that describe observable behavior which a student is expected to exhibit following a course of study. Performance objectives have three primary components: (1) Performance, (2) Conditions of Acceptable Performance, and (3) Criterion.

Component #1:

Performance - what the learners are expected to be able to do or perform to demonstrate mastery of the objective. The performance must be observable as well as measurable. (This is also referred to as "performance outcome.")

Examples of performances are:

a) List all of the carpal bones of the hand . . .
b) Describe the characteristics of an arterial hemorrhage . . .
c) Draw venous blood from a patient . . .
d) Locate the anterior superior iliac spine on a patient . . .
e) Attend to the patient's safety needs . . .

Note that the above performances contain action verbs that allow the instructor to observe and measure the student's achievement.

Instructors often write objectives that utilize verbs that are not observable or measurable. Examples are:

- know the names of the teeth
- understand the x-ray machine circuit

How could the instructor observe or measure the student's knowledge or understanding of the concept? These objectives may be corrected by replacing the ambiguous verbs with action verbs, such as:

- list the names of the teeth
- draw the x-ray machine circuit

The instructor could then give a test to the students and have them complete these performances in ways that are observable and measurable.

Example Activity for Action Verbs

In each of the following performances, delete the nonaction verb and replace it with an observable, measurable verb.

1. Comprehend the meaning of the word "prove."

2. Think of 5 respiratory diseases.

Possible answers to example activity:

1. State or write the meaning of the word "prove."

2. List, state, or name 5 respiratory diseases.

Component #2:

Conditions of acceptable performance - statements of the circumstances under which the objective will be achieved and with what tools and equipment.

Examples of conditions are:

a) given a list of anatomical terms and definitions . . .
b) using a sphygmomanometer . . .
c) while in the respiratory therapy department . . .
d) without using a reference . . .

Although the conditions may be assumed or are not always necessary, specifying the conditions helps communicate the objectives to the student.

Component #3:

Criterion - the level of acceptable performance, or how well the learner must perform in order to achieve the objective.

Examples of criteria are:

a) with 100% accuracy
b) within 2 inches
c) within 5 minutes
d) according to the definition found in Taber's Cyclopedic Medical Dictionary
e) according to the dentist's specifications

Specifying the criteria will also help to communicate the objective by letting the student know how he/she is to be evaluated, or the amount of error that will be allowed, but it is not always necessary.

In summary, measurable performance objectives must include the performance, and may or may not include the conditions and criteria. Instructors with minimal experience in objective writing are encouraged to include all three components.

The following are examples of objectives that contain all three components. The performance is underlined once, condition(s) are underlined twice, and criteria are underlined 3 times.

1. Following a demonstration, the student will position a patient for a chest x-ray with 100% accuracy.

2. Using a model, the student will demonstrate application of a fluoride treatment within 10 minutes.

3. Without the use of references, the student will identify 5 of the bones of the foot.

Review of Learning Activity #1

As discussed in this portion of the module, measurable performance objectives contain three components: the performance, the conditions of performance, and the acceptable criterion. Following completion of this, you should be able to identify each of these three components for any given objective.

At this time, take the Self-Check of Learning Activity #1 to determine if you are able to identify the components.

SELF-CHECK FOR LEARNING ACTIVITY #1

Directions: For the following measurable performance objectives, identify the three major components of each objective. Underline the performance once, underline the condition twice, and underline the criterion three times. (Note: Some of the objectives may not contain all three components.)

Example: Given a patient, a stethoscope, and a sphygmomanometer, measure the patient's blood pressure within 3 millimeters of pressure and within 5 minutes.

1) Given a modern hospital bed, adjust the bed so that it is in the trendelenburg position.

2) List the major muscles of the face, without the use of a reference, with 80% accuracy.

3) Using a caliper, measure the patient for a radiograph of the ankle within 1/2 centimeter.

4) Using a dental instrument, scale the bicuspids, leaving no calculus on each bicuspid, within 5 minutes.

5) Using a microscope and slide, distinguish between red and white blood cells.

6) Draw a diagram of the human heart, showing the direction of blood flow through the heart.

7) Demonstrate the proper procedure for using portable oxygen equipment in the clinical setting.

8) Given the brand names of a list of pharmaceuticals, identify their generic names with 100% accuracy.

SELF-CHECK ANSWER KEY

For the following measurable performance objectives, identify the three major components of each objective. Underline the performance once, underline the condition twice, and underline the criteria three times.

1) Given a modern hospital bed, adjust the bed so that it is in the trendelenburg position.

2) List the major muscles of the face, without the use of a reference, with 80% accuracy.

3) Using a caliper, measure the patient for a radiograph of the ankle, within 1/2 centimeter.

4) Using a dental instrument, scale the bicuspids, leaving no calculus on each bicuspid, within 5 minutes.

5) Using a microscope and slide, distinguish between red and white blood cells.

6) Draw a diagram of the human heart, showing the direction of blood flow through the heart.

7) Demonstrate the proper procedure for using portable oxygen equipment in the clinical setting.

8) Given the brand names of a list of pharmaceuticals, identify their generic names with 100% accuracy.

LEARNING ACTIVITY #2

THE CHARACTERISTICS OF MEASURABLE OBJECTIVES

Enabling Objective 2: Identify the characteristics of measurable performance objectives.

Measurable performance objectives have certain characteristics which make them more relevant, clear and concise. Your objectives should possess the following characteristics in order to be easily understood by the students:

1. The measurable performance objective describes student behavior rather than the duties of the teacher.

   Example: Correct: . . . list the three types of body habitus . . .
   Incorrect: . . . to describe to the students the three types of body habitus . . .

2. The measurable performance objective describes the learning outcome or the desired behavior rather than the process in learning the behavior. In other words, it states the "end" rather than the "means."

   Example: Correct: . . . differentiate between the false pelvis and the true pelvis . . .
   Incorrect: . . . gain knowledge of the differences between the false pelvis and the true pelvis . . .

3. The measurable performance objective describes the learning outcome rather than simply stating the material or subject matter to be covered. Using a hard action verb, when describing the performance, keeps you on the right track.

   Example: Correct: . . . convert centigrade temperature to fahrenheit temperature . . .
   Incorrect: . . . temperature conversion problems

4. The measurable performance objective describes only one learning outcome rather than several types of learning outcomes. Therefore, only one action verb should be used per objective.

   Example: Correct: . . . define "holistic health" . . .
   Incorrect: . . . define "holistic health" and apply this patient care approach to your clinical experience . . .

5. The measurable performance objective describes a specific performance rather than a broad or general performance. It should be stated in such a way that different persons could understand the objective in order to evaluate the student's performance in the way that it was intended.

   Example: Correct: . . . ask the patient about his/her medical history . . .
   Incorrect: . . . communicate with the patient . . .

6. The measurable performance objective describes behavior which is observable and measurable rather than a behavior which is unable to be seen and evaluated (as described in Learning Activity #1).

   Example: Correct: . . . list the names of the teeth . . .
   Incorrect: . . . know the names of the teeth . . .

7. Finally, the measurable performance objective should be relevant to your health occupation. There is no need to assign an objective which is out of the realm of your field.

Review of Learning Activity #2

Measurable performance objectives have several desirable characteristics. They describe: student behavior rather than teacher duties; learning outcome rather than the learning process; learning outcome rather than subject matter; one learning outcome rather than several; a specific performance rather than a general performance; a measurable performance rather than an immeasurable performance; and, relevant behavior in the particular health field of concentration.

Completion of this activity should help you to write objectives that possess the characteristics of a measurable performance objective.

Proceed to the Self-Check of Learning Activity #2 to test your ability to identify the characteristics.

SELF-CHECK FOR LEARNING ACTIVITY #2

Directions: For each objective listed, indicate which characteristic is not possessed by the objective. Using the following list of characteristics, indicate the "missing" or incorrect characteristic by writing the number of the characteristic on the line next to the objective.

List of Characteristics

1. student behavior rather than teacher duties
2. learning outcome rather than learning process
3. learning outcome rather than subject matter
4. one learning outcome rather than several
5. specific performance rather than general
6. measurable performance rather than immeasurable
7. relevant behavior rather than irrelevant

Example: In the clinical setting, assist the patient to the table and position the patient for an abdominal radiograph, with 100% accuracy ____#4____
(The answer is #4, because two separate learning outcomes were indicated instead of only one.)

A. After reading the textbook assignment, understand the functions of a team leader. A. _____

B. Given a patient chart, the instructor will assist the student in writing notations. B. _____

C. Uses of statistical procedures. C. _____

D. After choosing a topic for for an essay, the student will go to the library to research the chosen topic. D. _____

E. Given the necessary supplies, do the duties of a nurses's aid with at least 86% accuracy. E. _____

F. Given all the necessary nursing supplies, the student will list and perform the five steps necessary for inserting a foley catheter without causing undue patient discomfort. F. _____

G. Proper sterilization of dental instruments with 100% accuracy, as specified in the procedure manual. G. _____

H. In the clinical setting, educate the patient with patience and accuracy. H. _____

I. Given a patient with a severe infection, the student will prescribe the appropriate medication with 100% accuracy. I. _____

J. During a simulated demonstration, the student will be shown the Red Cross method of giving artificial respiration. J. _____

K. Given a thermometer, check the patient's temperature and record the temperature in the patient's chart, with 100% accuracy and within 3 minutes. K. _____

L. Given a cancer patient, the student will care about the patient. L. _____

SELF-CHECK ANSWER KEY

A. -6- "Understanding" is not observable.

B. -1- This is describing teacher duties.

C. -3- There is no action verb here to describe a performance. This is merely stating subject matter.

D. -2- This is describing the learning process instead of describing the performance of the research.

E. -5- To "do all the duties" is too general.

F. -4- To "perform" and "list" describe two separate learning outcomes.

G. -3- This has no action verb to describe a performance.

H. -5- To "educate" is too general to perform or evaluate.

I. -7- This duty should only be performed by a doctor; therefore, it is irrelevant for the health care worker.

J. -1- This is describing the teacher's duty.

K. -4- This describes two separate performances, which are to "check" and to "record."

L. -5- or -6- This is too general, and, therefore, too vague to perform or evaluate. The instructor cannot observe the student "care about" the patient.

If you feel confident in identifying the characteristics of an objective, proceed to Learning Activity #3.

LEARNING ACTIVITY #3

THE DOMAINS OF MEASURABLE PERFORMANCE OBJECTIVES

Enabling Objective 3: Given a list of measurable performance objectives, categorize each as being cognitive, psychomotor or affective.

Measurable performance objectives are categorized into three main types or "domains"--cognitive, psychomotor, and affective. These domains describe three types of observable behavior exhibited by the student. As an instructor you can observe and evaluate the students':

1) Knowledge and understanding of the subject matter (cognitive domain)
2) Physical action and motor skills (psychomotor domain)
3) Feelings and attitudes (affective domain)

I. Cognitive Domain

The cognitive domain deals with mental processes and activities such as the memorization and the application of facts. This domain is most commonly applied in writing objectives for the classroom setting. However, clinical instructors must also be familiar with the use of the cognitive domain, for the learner must have a good "grasp" of the subject matter before he/she can apply it in the clinical setting.

The following are examples of ACTION VERBS used for writing objectives in the cognitive domain:

apply	explain
define	identify
discuss	interpret
evaluate	name
examine	prepare

The following are examples of objectives in the cognitive domain:

1) Given a list of generic drugs, identify the antibiotics with 95% accuracy. (Cognitive)

2) Given a patient case study, the student will prepare a care plan according to the format illustrated in the text. (Cognitive)

A much more extensive discussion of the cognitive domain is included in Learning Activity #4, where the "levels" of the cognitive domain are described.

II. Psychomotor Domain

The psychomotor domain deals with motor skills needed to perform a task. These skills range from perceiving the need for the skill to actually organizing each skill as part of the entire task. This domain is important to you, as it is primarily used in the clinical setting. Psychomotor objectives can also be applied in the classroom, usually in laboratories and in demonstrations of skills.

The following ACTION VERBS are used to describe psychomotor performance:

adjust
administer
agitate
approach
assemble
bandage
blend
build
calibrate
center
change
clean
collect
collimate
connect
construct
coordinate
cut
demonstrate
develop (medical film)
dilute
dismantle
dispose
dissect
distinguish
drain
draw
duplicate
fasten
feed
fill
filter
fit
fix
guide
handle
heat
hook
increase
inject
innoculate
insert
lengthen
load
locate
make
manipulate
mark
maintain
measure
mix
mold
move
operate
palpate
perform
pin
pipet
place
position
pour
prepare
puncture
process (medical film)
produce
raise
record
remove
repair
replace
report
reset
rinse
rip
roll
scale
see
select
set up
shake
sharpen
shorten
shut
slide
smear
smell
stain
start
stock
stop
straighten
streak
strike
switch
taste
tilt
titrate
touch
transfer
transport
trim
turn
twist
type
use
wash
weigh
wipe
wrap

As you can see, the action verbs involve movement or the actual performance of a task. You should be able to select those verbs that are appropriate for use in your health occupations area, and you could probably think of more to add to the list.

The following are examples of psychomotor objectives:

1) In a laboratory setting, the student will prepare a blood sample under the specifications discussed in the handout provided. (Psychomotor)

2) Given two objects, the student will weigh each object within 0.5 grams. (Psychomotor)

Note: Often the same action verb will appear under two different domains, e.g., recommend. Depending on the context in which it is used, the same verb can describe two different performance domains.

III. Affective Domain

The affective domain deals with the emotions, values, and attitudes of the student. Affective performance ranges from receiving an emotion to organizing a value system in order to build character. It includes subjects such as attitudes needed to survive on the job, and death and dying. Often, this domain is ignored in health occupations programs because it is believed to be too difficult to evaluate. However, teaching and evaluating the student's affective behavior in the clinical setting is essential, for it is the domain which builds positive value systems toward work and patient care.

The following ACTION VERBS may be used to describe affective performance:

accept	challenge	develop	investigate	prefer	revise
acclaim	change	devote	initiate	promote	seek
adhere	choose	differentiate	join	propose	select
advocate	combine	discuss	judge	protest	share
applaud	commend	discriminate	justify	pursue	specify
approve	compare	display	listen	read	subscribe
argue	complete	evaluate	modify	realize	suggest
ask	comply	examine	obey	receive	support
assist	conform	favor	object	recommend	test
attempt	control	follow	observe	reject	theorize
attend	cooperate	formulate	organize	relinquish	try
augment	criticize	give	participate	request	verify
avoid	debate	help	persist	resist	visit
balance	defend	influence	practice	resolve	volunteer
believe	desire	invite	praise	respond	weigh

The following are examples of affective objectives:

1) Given a job-related problem, the student will seek solutions to solving the problem according to the problem solving process stated in the text. (Affective)

2) In the clinical setting, the student will assume responsibility for arriving on time every day of the clinical experience, within 2 minutes of the hour. (Affective)

Review of Learning Activity #3

As discussed in this Learning Activity of the module, measurable performance objectives can be categorized under one of three domains: cognitive, psychomotor or affective. Following completion of this activity, you should be able to categorize objectives into these three different domains.

At this time, take the Self-Check of Learning Activity #3 to determine if you are able to categorize objectives into the three domains.

SELF-CHECK FOR LEARNING ACTIVITY #3

Directions: For each of the following measurable performance objectives, indicate in which domain it belongs by writing cognitive, psychomotor, or affective on the line next to the objective.

Objective

A. List the major muscles of the extremities with 90% accuracy. A. _____

B. Given a description of a situation in which an accident/incident occurred and the necessary forms, prepare an accident report according to the regulations found in the hospital rules handbook. B. _____

C. Given a bed, wheelchair and a disabled patient, the student will seek help in transferring the patient from the bed to the wheelchair. C. _____

D. Given packages containing sterile items, unwrap each package without touching any sterile surfaces. D. _____

E. Given a rectal thermometer and a patient on an examining table, the student will insert the thermometer rectally, accurately, and without causing undue discomfort for the patient. E. _____

F. Given an emergency tray and an inventory list, identify any deficiencies found on the tray with 100% accuracy. F. _____

G. Given the hospital rules and regulations handbook, the student will adhere to the rules and regulations as stated. G. _____

H. Given a patient and a watch with a second hand, the student will measure the patient's pulse rate within 4 beats per minute. H. _____

I. Given a patient in a modern well-equipped dental office, the student will apply suction to the patient accurately and without damaging the mucous lining of the mouth. I. _____

J. In the classroom, the student will debate the pros and cons of Home Health Care. J. _____

After completing this Self-Check, check your answers with the Self-Check Answer Key on the following page.

SELF-CHECK ANSWER KEY

A. Cognitive - this is a simple knowledge objective.

B. Cognitive - this involves taking a situation and putting the parts together into a written form.

C. Affective - the student must value the importance of safety when transporting a patient.

D. Psychomotor - this is a motor skill involving the action of unwrapping.

E. Psychomotor - this is a motor skill involving insertion of the thermometer.

F. Cognitive - this involves an analysis of the list and the products or parts of the tray in order to identify the deficiencies.

G. Affective - this involves establishing job survival skills and appropriate attitudes for work.

H. Psychomotor - the student is actually performing the skill of taking a pulse.

I. Psychomotor - this involves motor skills and manipulation of equipment.

J. Affective - this involves the student in a situation of expressing beliefs or attitudes about Home Health Care.

Proceed to Learning Activity #4.

LEARNING ACTIVITY #4

LEVELS OF COGNITIVE OBJECTIVES

Enabling Objective 4: Given a list of cognitive objectives, identify the appropriate level of each objective.

As an instructor, you can plan the student's "growth" in learning by presenting the student with measurable performance objectives which range from "low" to "high" in level of difficulty. Each domain has divisions or steps of difficulty, called "performance levels," which help you plan well-rounded learning experiences. Educational psychologists have developed classifications of measurable performance objectives called "taxonomies" for all three domains. This module will include the specific performance levels within the cognitive domain. You may refer to the following references for the specific performance levels in the psychomotor and affective domains. (Gronlund, 1970), (Bloom, 1956), (Krathwohl, 1964), (Ford, 1976), (Simpson, 1972), (Mager, 1975).

The cognitive domain consists of 6 performance levels: (1) knowledge, (2) comprehension, (3) application, (4) analysis, (5) synthesis, and (6) evaluation.

1. KNOWLEDGE LEVEL: The lowest level of performance in the cognitive domain is the knowledge level. Knowledge of subject matter involves the ability to recall previously learned material, whether the material is simple or complex. Before the learner can reach a higher level of learning, he/she must have a basic "knowledge" of the material.

When writing measurable performance objectives for the knowledge level, ACTION VERBS such as the following could be used:

cite	recite
count	record
define	repeat
draw	select
identify	state
list	tabulate
name	tell
point	trace
quote	underline
read	write

2. COMPREHENSION LEVEL: The comprehension level takes the learner one step beyond the knowledge or memorization level. To achieve comprehension of the subject matter, your student should be able to take the material learned at the knowledge level and relate that material to ideas. In other words, your student should be able to grasp the full meaning of the material at hand. The following ACTION VERBS are suggested when writing performance objectives at the comprehension level:

associate	express
classify	extrapolate
compare	interpolate
compute	locate
contrast	predict
describe	report
differentiate	restate
discuss	review
distinguish	tell
estimate	translate
explain	

3. APPLICATION: The third performance level, or application level, of the cognitive domain requires a higher level of understanding of material than the comprehension level. At this level, your student is expected to apply previously learned material to new situations or settings. Application is most often used in problem-solving situations where rules, laws, principles and theories must be applied to different problems and situations. Some ACTION VERBS used at the application level are:

apply	operate
calculate	order
classify	practice
demonstrate	*report
determine	restructure
dramatize	schedule
employ	sketch
examine	solve
illustrate	translate
interpolate	use
interpret	*write
locate	

*Note: Some verbs are repeated at different levels, because depending on the context in which they are used, these verbs can describe different levels of performance.

Review:

At this point it may be helpful to you as a clinical instructor to review the first three levels of the cognitive domain by using examples of objectives.

For instance, let us assume you are teaching a unit on vital signs. The student will:

1. On an exam, identify the range of normal body temperature for adults with 100% accuracy. (Knowledge)

2. Given a series of body temperatures, classify each as being normal or abnormal for adults, with 100% accuracy. (Comprehension)

3. Given a set of 10 adult patient charts, determine which patients have a normal body temperature. (Application)

The previously mentioned objectives are written in order from the knowledge level, in which the student must be able to recall previously learned material, to the comprehension level, in which the student gains an increased understanding by comparing sets of temperatures, and finally to the application level, where the student actually applies the knowledge in a clinical setting. It should be evident that in order to accomplish objective #3, the student must be able to achieve the first two objectives.

Note the labeling of the level of each objective in parentheses following the objective. This is a good practice to follow, as it helps you to include objectives at all levels. Now let us proceed to the last three or "higher" levels of objectives in the cognitive domain.

4. ANALYSIS: At this level, your students should not only know the content of the material, but also its structural parts. They should be able to "break down" material into parts and show how each part fits into the whole. For example, a student may be asked to inspect a patient's chart to determine if the patient is in "good" health. The student must be able to "analyze" the recorded vital signs so that the patient's health can be classified as good or poor. The following ACTION VERBS could be used in writing measurable performance objectives at the analysis level:

analyze	examine
appraise	experiment
calculate	identify
categorize	inspect
classify	inventory
compare	question
debate	separate
diagram	summarize
differentiate	test
distinguish	

5. SYNTHESIS: The synthesis level is essentially one step higher than the analysis level. After the material is "analyzed" or separated into parts, your student is expected to reorganize, or put the parts of material together, to form a "new" whole. In other words, your student must be able to manipulate the material in a creative way in order to construct a new structure or pattern of the material. The following ACTION VERBS can be used to foster synthesis level performance:

arrange	organize
assemble	plan
collect	prepare
compose	prescribe
construct	produce
create	propose
design	specify
formulate	synthesize
integrate	write
manage	

6. EVALUATION: The evaluation level is the highest performance level in the cognitive domain. At this level, your students are required to make judgments and assessments of the learning material. In order to perform at the evaluation level, your students must have complete mastery of the material. Thus, all of the performance levels in the cognitive domain must be completed before the evaluation level can be attempted. The following ACTION VERBS can be used for the evaluation performance level:

appraise	estimate	recommend
assess	evaluate	revise
choose	grade	score
compare	judge	select
criticize	measure	standardize
critique	rank	test
determine	rate	validate

Review:

Let us now review the 3 highest levels of the cognitive domain--analysis, synthesis, and evaluation.

Assume that there is a problem in a radiology clinical area, in that the films are consistently too dark or have too much density. The student could be given the following objectives:

The student will:

1. Given a set of films, inspect each to determine whether or not they have too much density, with 100% accuracy. (Analysis)

2. Following inspection of the films, formulate a list of 10 probable causes for the excessive density of the films. (Synthesis)

3. Given the list of probable causes, determine which factor(s) caused the excessive density, within 5 minutes time. (Evaluation)

With these particular objectives in hand, a student has the basic guidelines for solving the problem of dark x-ray films. The student must first "break down" previously learned material into parts, in this case analyzing films. The next step is to reorganize the material by inspecting the dark films and proposing possible causes for the problem. Finally, the student must make a judgment by determining the actual cause.

Objectives written at the higher levels of analysis, synthesis, and evaluation are primarily used for problem-solving activities, and are most often used during the latter part of the student's training. However, you as a clinical instructor should make an attempt to help students to reach "higher" levels of learning throughout the duration of their education. Of course, the students must first progress through the 3 lower levels.

To check your understanding of classifying objectives, complete the Self-Check of Learning Activity #4. Check your answers after completion of the activity.

SELF-CHECK FOR LEARNING ACTIVITY #4

Directions: For each of the following measurable performance objectives, identify its performance level by writing the appropriate number on the line to the right of the objective.

1 - Knowledge
2 - Comprehension
3 - Application
4 - Analysis
5 - Synthesis
6 - Evaluation

	Objective	Levels
A.	Given a series of chest sounds, the student will classify each as being normal or abnormal without error, and within 1 minute.	A. _____
B.	Given an oral exam on the skeletal system, the student will recite all the names of the tarsal bones with 95% accuracy, and within 2 minutes.	B. _____
C.	Given a list of abnormal and normal characteristics of the skin, differentiate between abnormal and normal skin markings with 90% accuracy.	C. _____
D.	Given a demonstration on splinting a compound fracture, the student will judge the performance of the splinting demonstration with 95% accuracy.	D. _____
E.	Given an objective test on first aid procedures, the student will write each type of fracture without error.	E. _____
F.	Given an objective test on the x-ray circuit, the student will differentiate between the functions of the transformer and the functions of the autotransformer which have influence on the function of the entire circuit, with 90% accuracy.	F. _____
G.	Given a typical nursing care plan, arrange the components in order, according to the needs of an atypical patient presented in a case study, with 95% accuracy.	G. _____
H.	Draw the femur bone with 95% accuracy, and within 3 minutes.	H. _____

SELF-CHECK ANSWER KEY

A. -3- Application - The student must apply previous material on the characteristics of chest sounds in order to make the differentiation.

B. -1- Knowledge - The student needs only to recall the names of the tarsal bones.

C. -2- Comprehension - The student needs to comprehend the meaning of the characteristics listed, and be able to differentiate the characteristics by relating their meanings to the idea of normal and abnormal characteristics.

D. -6- Evaluation - The student is judging or evaluating the performance of the demonstration.

E. -1- Knowledge - The student only needs to recall and write down material that has been learned.

F. -4- Analysis - The verb "differentiate" takes on an even deeper meaning in this objective than in objectives "A" and "C." Here, the student must break down the x-ray circuit and show how two of the essential parts function to contribute to the function of the whole circuit.

G. -5- Synthesis - The student must take the list of components in its present form and reorganize the components into a new arrangement.

H. -3- Knowledge - The student must recall previously learned material in order to draw the bone.

Check your score. If you had 6 or more correct, you are doing great and have a good understanding of classifying cognitive objectives. If you have less than 6 correct, you should review the material again.

LEARNING ACTIVITY #5

REVISING MEASURABLE PERFORMANCE OBJECTIVES

Enabling Objective 5: Given a list of performance objectives, revise them so that they possess the necessary characteristics and components of measurable performance objectives.

The last four activities were devoted to describing the components, characteristics, domains, and levels of performance objectives. Now that these elements have been explained to you, it is time for you to put them into practice. Up to this point, you should be able to:

1. Identify the major components of a given objective:

   - performance
   - conditions
   - criterion

II. Categorize a given objective into the following domains:

   - cognitive (and the specific cognitive levels)
   - psychomotor
   - affective

III. Identify the characteristics of an objective, to ensure that the objective is describing:

   - student behavior rather than teacher duties.
   - learning outcome rather than learning process.
   - learning outcome rather than subject matter.
   - one learning outcome rather than several.
   - specific performance rather than general.
   - measurable performance rather than immeasurable.
   - relevant behavior rather than irrelevant.

If you do not feel competent in any of these elements, go back to the previous activities and review the material before proceeding with this activity.

Revising performance objectives is much like editing copy for a newspaper or publication. When given a story or article, the editor must proofread the copy and make revisions, so that the copy suits its purpose of informing the reader of current events. As an instructor, you must act as an editor to revise your performance objectives, in order to make sure they suit the purpose of informing your students of their expected performance. Although you probably have not yet written objectives, practice in revising performance objectives will help you to apply the knowledge you have already learned, and should also improve your objective-writing skills.

I. The first step in revising objectives is to decide whether a performance objective is adequate or inadequate. In order to be adequate, a performance objective must possess the 3 major components, have the necessary characteristics, and fit within one of the domains.

In order to help you decide if a particular objective is adequate, you can utilize the following checklist:

CHECKLIST FOR ADEQUATE PERFORMANCE OBJECTIVES

_____ 1. Does the objective include the performance, and preferably the conditions and criteria for performance?

_____ 2. Does the performance component contain a hard action verb?

_____ 3. Is the performance observable and measurable?

_____ 4. Is the domain of the performance objective appropriate for the expected performance?

_____ 5. Is the level of cognitive domain appropriate for the expected performance?

_____ 6. Does the objective describe student behavior rather than teacher duties?

_____ 7. Does the objective describe the learning outcome rather than the learning process?

_____ 8. Does the objective describe the learning outcome rather than the subject matter?

_____ 9. Does the objective describe one learning outcome rather than several?

_____ 10. Does the objective describe a specific performance rather than a general performance?

_____ 11. Does the objective describe relevant behavior rather than irrelevant behavior?

II. The second step in revising objectives is to identify the specific error or omission made in writing the objective.

The previously mentioned checklist questions should help you to identify these inadequacies. Checklist questions 1-3 pertain to the components of a performance objective; checklist questions 4 and 5 pertain to the three domains; and checklist questions 3, and 6-11 pertain to the objective characteristics.

Sample Activity 5A

Directions: Label each of the following performance objectives as being either adequate (A) or inadequate (I), by placing an (A) or an (I) on the line next to each. If the performance objective is inadequate, indicate the number(s) of the checklist question(s) that indicate(s) the error.

_____ A. Pour medications accurately, according to the physician's specification.

_____ B. When taking a patient history, the dental hygienist will advocate the proper routine flossing technique.

_____ C. When handling a patient with a fractured limb, feel sympathy toward the patient.

_____ D. In the laboratory, take cytologic specimens and prepare slides, according to the department specifications.

_____ E. Using the PDR, locate the pages which describe insulin, penicillin, and morphine with 100% accuracy.

_____ F. In the clinical setting, relate to the students the importance of writing regular, accurate, legible, and concise nurse's notes.

_____ G. Perform the duties of a nurse in the medical/surgical department of a hospital.

____ H. The decision-making process.

Answers to Sample Activity 5A

A. A - Although this objective does not contain the conditions of the performance, the performance can be well understood without them.

B. A - "Advocate" is an observable performance found under the affective domain.

C. I - #2 and #3. "Feel" is not an observable performance and is not a hard action verb.

D. I - #9. To "take" and "prepare" are both action verbs which describe two separate types of performances. The measurable performance objective should only describe one type of separate performance.

E. A - Although there is more than one word to locate, the verb is describing only one type of performance.

F. I - #6. This is describing teacher duties instead of student performance.

G. I - #10. This performance is too general to demonstrate or evaluate.

H. I - #1, 2, 3, and 8. There is no performance and no action verb, therefore, the objective is not observable. This objective is stating only the subject matter and does not identify learning outcome.

III. The third step in revising objectives is to rewrite the objective so that it possesses all the necessary elements (components, domains, and characteristics) contained in adequate measurable performance objectives.

To test your ability to revise objectives, complete Activity 5B.

Sample Activity 5B

Directions: Rewrite the inadequate objectives (C, D, F, G, and H) so that they are adequate. You may turn back to Learning Activities 3 and 4 for help in using the most correct action verb.

When you have finished, check your answers on the next page.

Possible Answers to Sample Activity 5B:

C. When handling a patient with a fractured limb, attend to the patient's needs.

-or-

When handling a patient with a fractured limb, display concern for the patient's comfort.

(For this objective, make sure that the verb you choose is as close as possible to the desired affective behavior stated in the original objective.)

D. In the laboratory, take cytologic specimens, according to the department specifications.

-and-

In the laboratory, prepare slides, according to the department specifications.

(For this objective, the two separate types of performance must be separated into two performance objectives.)

F. In the clinical setting, write regular, accurate, legible and concise nurse's notes.

(For this objective, the objective must be restated in terms of student performance. Therefore, any reference to teacher duties is deleted.)

G. Given a patient who has just returned from surgery, monitor the patient's heart rate every 15 minutes, within 2 beats per minute.

-or-

Give preoperative care to a patient due for open heart surgery, according to the surgeon's orders.

-or-

Given a list of required linen supplies, order enough supplies to last a week in the medical/surgical department.

(For this objective, many specific objectives pertaining to the medical/surgical department would be adequate.)

H. List the steps in the decision-making process, with 95% accuracy.

-or-

In the clinical setting, the student will apply the decision-making process to a patient care problem.

(For this objective, a performance pertaining to the decision-making process would be adequate.)

Proceed to the Self-Check on Learning Activity #5 to test your ability to revise inappropriate objectives.

SELF-CHECK ON LEARNING ACTIVITY #5

For each of the following objectives:

1. Indicate whether the objective is Adequate (A) or Inadequate (I) by writing the appropriate letter (A or I) on the line next to the objective.

2. Rewrite the inadequate objectives so that they are adequate and measurable performance objectives.

_____ 1. Explain to the students the appropriate technique for aspirating secretions from an endotracheal or tracheostomy tube, using aseptic technique.

_____ 2. The respiratory history must be recorded in an orderly, consecutive fashion under the following readings: the presenting complaints which lead to medical attention, personal and family history, previous illnesses and medical examinations, medications being taken, and occupational environment.

_____ 3. Given handwashing facilities and the necessary supplies, wash your hands thoroughly and completely without recontaminating them.

_____ 4. Irrigate acid-burned eye(s).

_____ 5. Provided a list of services rendered to a patient, study the details of each service in order to accurately fill out a charge slip for each service.

_____ 6. Perform a blood pH determination with values falling within 2 SD of control value, given a pH meter, reagents, controls, and specimen.

_____ 7. Given chest examination equipment and supplies, the respiratory therapy student will perform a physical chest examination on a patient and record the pertinent information in the patient's chart.

_____ 8. In a simulated situation, given an injured patient, perform emergency procedures according to the specifications given by the American Red Cross.

_____ 9. Given a surgical hat, place it on your head, covering all hair, before entering the surgical area.

_____ 10. In the clinical setting, appreciate the use of fire prevention and control.

Check your answers.

SELF-CHECK ANSWER KEY

1. I - Possible Correction: Given an intubated patient, and appropriate equipment/supplies, aspirate secretions from an endotracheal or tracheostomy tube using the aseptic technique.

   - The original objective was describing teacher duties instead of student performance. The corrected objective describes student performance with the conditions and criterion. The conditions may not be included, but are added to improve clarity and "set" the student for the performance.

2. I - Possible Correction: Given a new patient, obtain a respiratory history from the patient and/or family in an orderly, consecutive fashion.

   - The original objective was only a statement of criteria. The list of readings is part of the course content and need not be included in the actual objective. The performance was not stated in an "active" manner. The condition was included to improve clarity and "set."

3. A

4. I - Possible Correction: Given sterile water, running water or basin, and saline solution, irrigate acid burned eye(s) for at least five minutes.

   - The original objective describes a measurable performance correctly, but this particular performance is so critical that it needs to be further explained. The corrected objective must contain the criterion, and possibly the conditions.

5. I - Possible Correction: Provided a list of services rendered to a patient, fill out a charge slip for each service according to the hospital handbook.

   - The original objective described the learning process of "studying" instead of the performance of "filling." The student must study the details of the services in order to fill out the charge slip; therefore, only the performance needs to be stated. Note that the criterion "according to the hospital handbook" is more clear than the term "accurately."

6. A - The conditions need not be stated first.

7. I - Possible Correction: Given chest examination equipment and supplies, the respiratory therapy student will perform a physical chest examination on a patient according to the steps listed in the text.

   -and-

   Given chest examination equipment and supplies, the respiratory therapy student will record pertinent information obtained from a physical

chest examination in the patient's chart, according to the department specifications.

- The original objective described two separate performances, to "perform" and to "record." These two performances must be separated. The criterion is added to each objective to improve clarity, and it also tells your student from what source he/she will be graded.

8. I Possible Correction: In a simulated situation, given an injured patient who is not breathing, perform one-man CPR according to the specifications given by the American Red Cross.

   - The original objective was too general. This correction describes a specific performance. The condition was also made more specific to fit the performance.

9. A

10. I - Possible Correction: In the clinical setting, advocate the use of fire prevention and control.

    - The original objective contained an immeasurable performance verb. To "appreciate" is not observable and, therefore, is not measurable.

    - It is also important to note that the verb you use to replace "appreciate" should be from the affective domain, since the original objective is affective. Therefore, verbs selected from the cognitive or psychomotor domains, such as explain or perform, would not be appropriate.

Check your score:

Add your total correct points. If you received 8 or more correct on the above activity, you are doing very well and are ready to continue on to Learning Activity #6. If you received 7 or less correct, please review the material and practice your revising skill before continuing on to Learning Activity #6.

LEARNING ACTIVITY #6

WRITING MEASURABLE PERFORMANCE OBJECTIVES

Enabling Objective 6: Write a list of measurable performance objectives for a unit of clinical instruction in your health occupation area, according to specifications stated in this module.

Writing measurable performance objectives for your particular health care occupation is essential for providing a successful program of instruction for your students. These objectives are essential to the program, because they state expected learning outcomes and state the standards of performance for measuring each expected learning outcome. It is up to you, as an educator, to write clear and concise measurable performance objectives, in order to help your students set their goals for performance.

Before you actually write the performance objectives, you must identify the tasks and competencies within your field of health care. These tasks and competencies will provide you with the expected learning outcomes or performances which need to be stated in your measurable performance objectives. Where do you find these tasks and competencies?

The following resources can provide you with a list of performance tasks (i.e., administer anesthetics, clean instruments, insert oral airway) in your field of health care:

- Vocational Technical-Education Consortium of States (V-TECS) Catalogs[1]
- The UCLA Allied Health Professions Projects Task Analysis[2]
- Cluster Core for Health Occupations Education Instructor's Guide[3]
- Occupational Orientation, Health Occupations[4]

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[1]V-TECS catalogs may be purchased from the State of Illinois by writing: Gene Miller, Curriculum Publications Clearinghouse (CPC), 46 Horrabin Hall, Western Illinois University, Macomb, IL 61455; or call 800/322-3905 in Illinois, or 309/298-1917.
V-TECS catalogs are available on loan by writing: Illinois Vocational Curriculum Center, Sangamon State University, E-22, Springfield, IL 62708, or calling 800/252-4822 in Illinois, or 217/786-6375.

[2]USOE Research and Demonstration Grant 8-0627, University of California, Los Angeles, Division of Vocational Education Allied Health Professions Projects.

[3]Center for Occupational Curriculum Development, Division of Continuing Education, The University of Texas, at Austin.

[4]Illinois Office of Education, Joseph M. Cronin, 100 North First Street, Springfield, IL 62777.

- Job Descriptions - From local hospitals or nursing homes. You can obtain lists of competencies (follows directions, has a professional appearance, demonstrates honesty, etc.) from a number of resource persons:

- Advisory Committees
- Supervisors
- Health Care Workers
- Other Instructors
- Students

These resources can provide you with a list of competencies and attitudes needed by the "best" health-care workers in your field. After you obtain a list of tasks and competencies, edit the list by eliminating any duplicates and/or irrelevant tasks or competencies.

The list of tasks and competencies provides you with the basis for your performance objectives. You must now convert the tasks and competencies into observable and measurable performances.

Example:

Competency - professional appearance
Performance - display a professional appearance

Next, you must identify any conditions which may further explain the performance and/or provide the student with a "setting" for the performance.

Example:

Performance - display a professional appearance
Condition - In the clinical setting
- When on duty
- On the nursing unit

The criterion for the performance must now be identified. Make certain that the criterion is relevant to the performance and is a "reasonable" standard of performance.

Example:

Performance - display a professional appearance . . .
Condition - in the clinical setting . . .
Relevant Criterion - at all times.

(Irrelevant criteria for this performance would be:

. . . with 100% accuracy
. . . within 3 minutes)

After all three components have been written, you must combine the three components into sentences. Preferably, state the condition first, the performance second, and the criterion third. Make sure the sentences are complete and are workable in your field of health care.

Example:

- In the clinical setting, display a professional appearance at all times.

These objectives can now be checked and revised. Use the checklist questions in Learning Activity #5 (p. 26) to make sure your objectives contain all the necessary characteristics of accurate measurable performance objectives.

A list of measurable performance objectives should be grouped into separate units of study. If several of the objectives you have written pertain to a certain topic or subject, they can all be grouped into one unit. The unit of objectives should contain all three domains, and several of the levels within the cognitive domain. Make sure that you sequence the objectives from the lowest to highest level when writing in the cognitive domain, so your students can be taken gradually to the higher levels of thinking.

Now, you must use the measurable performance objectives in your program to instruct and evaluate students. (In later modules, we will discuss the use of objectives.)

Review of Learning Activity #6

There are several steps involved in writing measurable performance objectives.

1) Identify tasks and competencies.
2) Convert the tasks and competencies into measurable performances.
3) Identify the conditions for the performance.
4) Identify the criterion for the performance.
5) Combine the 3 components into one complete and measurable performance objective.
6) Check and revise your performance objective.
7) Group similar measurable performance objectives into units of study.
8) Sequence cognitive objectives from lowest to highest level.
9) Use the measurable performance objectives for instruction and evaluation.

Go on to the Self-Check.

SELF-CHECK FOR LEARNING ACTIVITY #6

Note: For this activity you must obtain a "resource person" (supervisor, department educational coordinator or fellow instructor who is familiar with writing performance objectives) to check your work.

Directions: Write a list of measurable performance objectives for a unit of clinical instruction in your health occupations area. Use this module as your guide. Make sure that the objectives are measurable, observable, and contain all the necessary characteristics. Check your own work by using the checklist questions in Learning Activity #5. Then check your work with a resource person who can write measurable performance objectives. Finally, revise any objectives which your resource person did not approve.

This completes the Learning Activities of the module. If you feel competent in the process of developing measurable performance objectives, continue to the Post-Test.

POST-TEST

Directions: Complete this test after successful completion of all of the Learning Activities of this module. This test must be completed without using the key or the module itself. Utilize the Answer Key to score your own test.

Fill in the Blank with the appropriate response:

1) The three components of a measurable performance objective are:

a) _____
b) _____
c) _____

2) The three domains of measurable performance objectives are:

a) _____
b) _____
c) _____

Multiple Choice: Circle the letter of the appropriate response.

3) Which of the following verbs does not describe a measurable performance?

a) assist
b) identify
c) know
d) contrast

4) Which of the following statements is a characteristic of measurable performance objectives?

a) describes teacher duties rather than student behavior
b) describes learning process and learning outcome
c) contains one action verb
d) must contain all three components

5) The following is a list of cognitive objectives of different levels:

Given appropriate references and equipment specifications, the student will:

1. Determine oxygen flow rates for 10 different concentrations of oxygen.
2. Review oxygen flow rates for various pathologic conditions.
3. Prepare a chart of oxygen therapy flow rates that is adaptable for use in a patient unit.
4. State oxygen therapy rates for normal patients.

Which of the following is the proper sequence of these objectives, from lowest to highest level?

a) 3, 1, 2, 4
b) 2, 1, 3, 4
c) 1, 2, 3, 4
d) 4, 2, 1, 3

Matching: For the following objectives, write the letter of the appropriate domain on the line next to each objective.

A. Cognitive
B. Psychomotor
C. Affective

6) _____ Provided a patient, admission forms, agency policy, and the necessary equipment and supplies, prepare the patient's records for admission to your unit, according to the specifications on the performance checklist.

7) _____ On an objective test, list the characteristics possessed by the surgical team, according to the text.

8) _____ Given an obese patient, recommend the diet and exercise plan prescribed by the doctor.

9) _____ Given a patient with a laryngectomy who is not breathing spontaneously, suction equipment, and catheter, apply mouth-to-stoma resuscitation at a rate of one ventilation every five seconds.

10) Rewrite the following objective so that it is a measurable performance objective:

Given a spectrophometer, pipettes, test tubes, cuvettes, timer, centrifuge, reagents, standard, and specimen, instruct the students on how to perform a blood alcohol test, so that the values come within 5% of the correct results.

POST-TEST ANSWER KEY

1. a) performance
   b) conditions
   c) criterion

2. a) cognitive
   b) psychomotor
   c) affective

3. C
4. C
5. D: 4, 2, 1, 3 (knowledge, comprehension, application, synthesis)
6. A
7. A
8. C
9. B

10. Possible revision: Given a spectrophometer, pipettes, test tubes, cuvettes, timer, centrifuge, reagents, standard, and specimen, perform a blood alcohol test, so that the values come within 5% of the correct results.

If you had more than 3 incorrect answers, you should review the module. If you had less than three incorrect answers, you are well on your way to being able to develop and utilize measurable performance objectives.

SUMMARY OF THE MODULE

Learning must be planned and evaluated, in order to make it a successful experience for your students. Through the use of measurable performance objectives, you can successfully plan your students' educational "goals" and evaluation procedures. Measurable performance objectives are either of the cognitive, psychomotor, or affective domain. They are also of various levels within each of the three domains. It is best to have a clinical education program comprised of objectives from all three domains and of high levels within each domain. Use the information you have learned from this module to write high quality measurable performance objectives for your clinical education program.

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